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The Students' Numerical Literacy Ability in Junior High Schools

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Abstract

This study aims to analyze the students' numerical literacy ability in junior high schools based on their status (accreditation and state/non-state schools). This study used the descriptive quantitative method. The participants were 150 students randomly selected from 2 state junior high schools (SMPN) based on the accreditation levels (A & B) and 1 non-state school (SMP). The instrument used was the modified result of the Numerical Literacy Ability test developed by the Center for Assessment and Learning (Pusmenjar) of the Ministry of Education and Culture. The collected data were analyzed using descriptive statistics. The research results indicated that: (1) the student's numerical literacy skills in junior high schools were low for all domains and tended to be very low in geometry; (2) at the L1 level, students did not experience difficulties, but other levels did, especially L3; and (3) school status had no significant effect on the students' numerical literacy skills.

Abstrak

Penelitian ini bertujuan untuk menganalisis kemampuan literasi numerasi siswa di SMP berdasarkan statusnya (akreditasi dan sekolah negeri/non negeri). Penelitian ini menggunakan metode kuantitatif descriptive. Peserta tersebut merupakan 150 siswa yang dipilih secara acak dari 2 SMPN Negeri (SMPN) berdasarkan jenjang akreditasi (A/B) dan 1 sekolah non negeri (SMP). Instrumen yang digunakan merupakan hasil modifikasi dari uji Kemampuan Literasi Numerasi yang dikembangkan oleh Pusat Pengkajian dan Pembelajaran (Pusmenjar) Kementerian Pendidikan dan Kebudayaan. Data yang dikumpulkan dianalisis menggunakan statistik deskriptif. Hasil penelitian menunjukkan bahwa: (1) kemampuan literasi numerasi siswa di sekolah menengah pertama rendah untuk semua domain dan cenderung sangat rendah dalam geometri; (2) pada jenjang L1, siswa tidak mengalami kesulitan, tetapi jenjang lain mengalami kesulitan, terutama L3; dan (3) status sekolah tidak berpengaruh signifikan terhadap kemampuan literasi numerik siswa.

***Keywords**: Numerical Literacy Ability, Mathematical Literacy, Domain Coverage*

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INTRODUCTION

The assessment system of primary and secondary schools in Indonesia changed in 2021. The Ministry of Education and Culture of the Republic of Indonesia (Kemdikbud) has revitalized the assessment system for primary and secondary education, from the National Examination (UN) to the National Assessment (AN) (Pusmenjar, 2020). The UN is individual/student-based, which determines students' graduation, while the AN is school-based which determines the quality of the school.

Minimum Competency Assessment (AKM) is one of the National Assessment components. AKM contains three assessment components: numeracy, reading, and scientific literacy. The Numerical Literacy Assessment aims to measure what students in grades V, IX, and XI already know about mathematics and what they can do with their mathematical knowledge and tools. Numerical Literacy questions consist of 3 components: content, context, and cognitive processes. The content consists of 4 domains: numbers, measurement and geometry, data and uncertainty, and algebra. The context consists of 3 domains: personal, socio-cultural, and scientific. The personal context is characterized by personal activities, family activities, and groups; the socio-cultural context is characterized by the perspective or views of the local, national, and global community problems. The scientific context focuses on the relationship of mathematics to other sciences called extra mathematics and the relation of mathematical concepts to other concepts in different subjects called intra-mathematical.

Minimum Competency Assessment has several domains. The scope of the number domain: the representation of whole numbers and fractions, the nature of the sequence of whole numbers and fractions, number operations (subtraction, addition, and division), and the square of a maximum number of 3 digits. The scope of the geometry and measurement domains: Flat shapes, the use of perimeter and area, the concept of building space, the use of volume, surface area, length, weight, time, discharge, velocity, acceleration, and standard units. Data and uncertainty domain coverage: obtaining information, simple presentation, and processing data (percentage, average etc.), weather forecast, economic model, scientific. Coverage Domain algebra: equations and inequalities, relations and functions, the pattern of numbers, ratios, and proportions. Cognitive process domains: understanding (L1), application (L2), and reasoning (L3).

School-based Minimum Competency Assessment (AKM) is specified as a class-based Minimum Competency Assessment, which aims to measure the quality of each class. The school-based AKM assessment is developed by the Center for Assessment and Learning (Pusmenjar) of The Ministry of Education and Culture of the Republic of Indonesia (Kemdikbud). In contrast, class-based AKM assessments are developed by teachers at each school. AKM development refers to the Program for International Student Assessment (PISA).

PISA is a study established by several developed countries globally members of the Organization for Economic Cooperation and Development (OECD) based in Paris, France. PISA is conducted every three years by OECD. This PISA monitors the results of the system from the point of view of student learning outcomes in each participating country, which includes three literacies: reading, mathematical, and scientific literacies. The general aim of PISA is to assess the extent to which 15-year-old students in

OECD countries (and other countries) have acquired the appropriate proficiency in reading, mathematics, and the sciences to make a significant contribution to their society (OECD, 2009, 2019b, 2019a; Stacey, 2016). The aims, content, context, and domain of PISA Mathematical Literacy are the same as Numerical Literacy. The most basic difference is the cognitive process. PISA math literacy has 6-level questions, while Numerical Literacy has 3 levels of questions.

PISA results greatly influence the direction and policy of education in various countries. In 2013, the Indonesian Ministry of Education and Culture changed the KTSP curriculum (2006) to the 2013 curriculum. In the 2013 curriculum, the objectives of mathematics taught at the junior high school level are relevant to the PISA mathematical literacy goals; namely, students can use their mathematical knowledge to reason, think and analyze problems in various contexts, both in the context of mathematics, as well as contexts outside mathematics (culture, science, and the phenomena that occur around them) (Ministry of National Education and Culture, 2014). The PISA study published by the OECD shows that Indonesian students' mathematical literacy skills are still low. Indonesia's mathema-tical literacy proficiency in 2015 was ranked 63 out of 70 countries with an average score of 386, while in 2018, it was ranked 73 out of 79 countries with an average score of 379 (Tohir, 2019). Many things need to be reviewed to overcome this problem, including teacher quality, student learning resources, evaluation system, community support, and stakeholders or the government itself.

Literacy is a significant thing to note since it is the initial ability that students must possess for their future. Numerical literacy is a person's ability to use reasoning (Ekowati et al., 2019). Numeracy literacy focuses on students' ability to formulate, apply, and interpret mathematics in various life contexts that incorporate mathematical reasoning. Perdana & Suswandari (2021) stated that numeracy literacy consists of three aspects, namely counting, numeracy relations, and arithmetic.

Putra et al. (2016) explains that numeracy literacy is very important because it helps to understand the role of mathematics in everyday life. The importance of numeracy literacy skills can be observed through the following example, a student learns the concept of multiplying integers by integers. Two times three is six. The result remains the same even though the question is replaced with three times two. However, it is different when administered in a medication delivery situation. The rule of two times three and three times two results in a different absorption effect. By mastering the concept of multiplication of integers and good numeracy skills, students are able to explain the reasons why the absorption effect of the medication is different (Tyas & Pangesti, 2018).

One of the efforts that can be made to overcome the low of students' mathematical literacy skills is research. The research results can be used as a basis for making policies and improving the learning process in the classroom, which leads to the growth and development of students' mathematical literacy or numeracy literacy skills. Research related to mathematical literacy has been carried out by several experts, including Alagumalai and Buchdahl (2021); Bolstad (2020); Genc and Erbas (2020); Kübra and Cigdem (2019); Kusuma, Sukestiyarno, Wardono, and Cahyono (2021); Ic and Tutak (2018); Ozgen (2019); Retnawati and Wulandari

Table 1. Participant Profile

Participants	Profile
The A-accredited school	21 men, 29 women, teaching qualifications of undergraduate mathematics education, average school math score of 7.6, and 3 people taking math courses.
The B-accredited school	19 men, 31 women, teaching qualifications of undergraduate mathematics education, average school math score of 7.4, and 1 person taking math courses.
Non-state school	27 men, 13 women, teaching qualifications of undergraduate mathematics education, average math score of 7.8, and 5 people taking math courses.

(2019); Suciati, Sudji, Sugiman, and Febriyanti (2020). In general, their research did not map students' mathematical literacy skills. This information is very important to be used as a foothold in making a policy or reforming learning. Until now, there is no research related to Numerical Literacy. For this reason, this study focused on analyzing the students' numerical literacy ability in junior high schools based on their status (accreditation and state/non-state schools).

METHOD

This research was conducted in Makassar City, South Sulawesi, Indonesia. This study quantitatively described the characteristics, relationships, similarities, and differences in students' numerical literacy abilities based on school status, domain coverage, and level of questions for each domain coverage. According to Sugiyono (2018) and Sukmadinata (2017), this type of research was descriptive research with a quantitative approach.

The steps for selecting participants: (1) select 2 state junior high schools (SMPN) based on the accreditation levels (A & B) and 1 non-state school (SMP); (2) randomly select 1 school for each so that 3 schools were chosen; and (3) randomly select 50 ninth-grade students at each selected junior high schools so that the total number of participants was 150 students. The participants' profile is shown in Table 1 (see Table 1).

The instrument used in collecting data on the numerical literacy ability test was modified from the test developed by the Center for Assessment and Learning (Pusmenjar) of the Ministry of Education and Culture. The modification was carried out on the context component, namely adjusting to the culture or facts at the research site. Characteristics of Numerical Literacy test: (1) The scope of the problem domains: numbers, flat shapes, space shapes, equations and inequalities, relations and functions, ratios and proportions, data and their representations, uncertainty, and opportunity. Each domain scope was made up of 1 theme, and each theme consisted of 3 levels of questions, namely understanding (L1), application (L2), and reasoning (L3), so the number of questions is 24 items; (2) Multiple and multiple-complex choices. Multiple-choice questions where only one answer choice correct. If the answer was correct, it scored 1. If it was incorrect or unchosen, it scored 0. Meanwhile, multiple-complex choices could be more than one correct answer choice. It had 1 score if all the choices were correct and 0 if there was an incorrect choice or no choice. Thus, the maximum score was 24, and the minimum was 0. Then, each score was converted to 100. Table 2 shows one example of Numerical Literacy questions.

Table 2. An Example of One of the Numerical Literacy Tests (Algebra: Two-Variable System of Equations)

<table>
<tr><th>Context</th><th>Question</th></tr>
<tr><td>
NASI KUNING MACCINI


One of the yellow rice stalls on the side of the East PAM Nipa-nipa Makassar Inspection Axis road offers several menus and prices, as shown in the picture above. The stall owner also serves a combination of available menus.
</td><td>
1. Mr. Ridwan, who lives not far from the stall, ordered 1 package of yellow rice with fried egg and chicken and 2 packages of mixed rice with fried fish. The money that Mr. Ridwan had to spend was....
A. IDR 22,000.00 C. IDR 32,000.00
B. IDR 24,000.00 D. IDR 34,000.00
2. If Anwar order 1 complete yellow rice package containing yellow rice, an egg, chicken and meat, the money that Anwar will spend is....
A. IDR 16,000.00 C. IDR 18,000.00
B. IDR 17,000.00 D. IDR 19,000.00
3. Based on the information of the picture, is the following statement true (T) or false (F)?
The price of yellow rice is higher than the price of mixed rice. B – F
The comparison of fried chicken and egg prices is 2: 1. B – F
The price of fried chicken is the same as fried fish. B – F
</td></tr>
</table>

After obtaining the results of the numerical literacy ability test, then data analysis was carried out using descriptive statistical analysis techniques, namely by calculating the frequency, percentage, mean, median, mode, standard deviation, maximum value, minimum value, and range to determine the characteristics, relationships, equations, and differences in students' numerical literacy abilities based on school status, domain coverage, and question level for each domain coverage.

RESULTS AND DICUSSION

Results

The students' Numerical Literacy Skills of Junior High Schools

Table 3 and figure 1 show that the students' numerical literacy ability scores were concentrated at intervals of 41-60 from the ideal score of 100, and most students got 50. The scores of other students were spread to the extreme minimum score. There were 31% of students who got below 41, and only 21% got scores of 61-88. No students scored above 88, and the percentage of students who got less or the same 50 was greater than those who scored above 50.

Table 3. Recapitulation of Descriptive Statistical Analysis Results of the Students' Numerical Literacy Ability

Interval	*Freq.*	*Percentage*	*Mean*	*Median*	*Mode*	*SD*	*Max.*	*Min.*	*Range*
01-10	*6*	*4*							
11-20	*12*	*8*							
21-30	*9*	*6*							
31-40	*19*	*13*							
41-50	*39*	*26*	*47*	*50*	*50*	*19*	*88*	*8*	*80*
51-60	*33*	*22*							
61-70	*20*	*13*							
71-80	*6*	*4*							
81-90	*6*	*4*							
91-100	*0*	*0*							
Total	*150*	*100*							

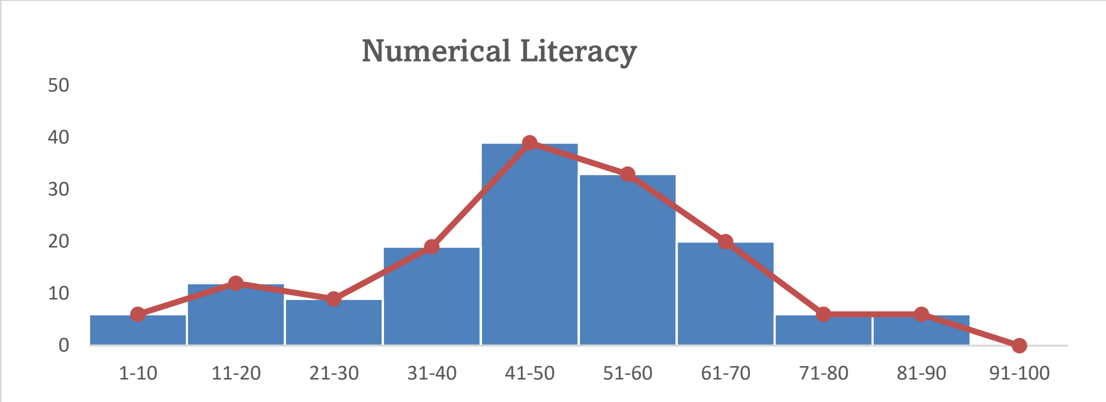


Figure 1. The Students' Numerical Literacy Ability of Junior High Schools in Makassar City

The mean, median, and mode showed that, in general, the score of students was 50 or the mean score of 47. Based on data interpretation, it can be concluded that the first finding in this study was the students' numerical literacy ability in junior high schools was in a low category and tended to be very low.

Table 4. Recapitulation of The Results of Descriptive Statistical Analysis of the Students' Numerical Literacy Ability of Junior High School Accredited A

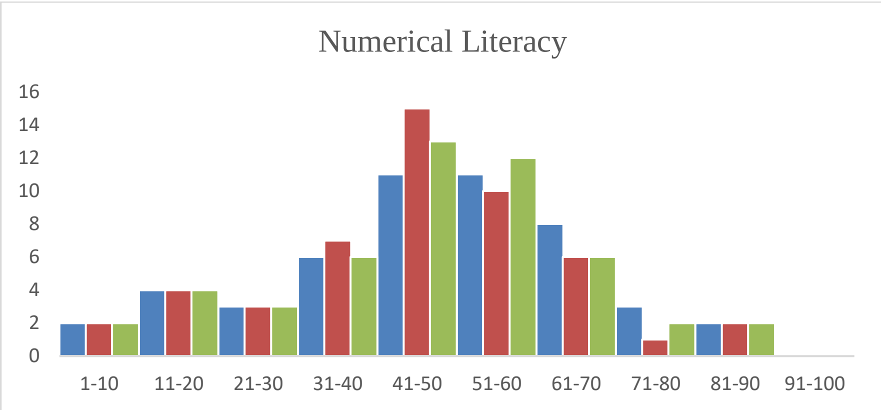
Interval	Freq.	Percentage	Mean	Median	Mode	SD	Max.	Min.	Range
01-10	2	4	48	50	50	20	88	8	80
11-20	4	8							
21-30	3	6							
31-40	6	12							
41-50	11	22							
51-60	11	22							
61-70	8	16							
71-80	3	6							
81-90	2	4							
91-100	0	0							
Total	50	100							

Table 5. Recapitulation of The Results of Descriptive Statistical Analysis of the Students' Numerical Literacy Ability of Junior High School Accredited B

Interval	Freq.	Percentage	Mean	Median	Mode	SD	Max.	Min.	Range
01-10	2	4	48	50	50	20	88	8	80
11-20	4	8							
21-30	3	6							
31-40	7	14							
41-50	15	30							
51-60	10	20							
61-70	6	12							
71-80	1	2							
81-90	2	4							
91-100	0	0							
Total	50	100							

Table 6. Recapitulation of the Results of Descriptive Statistical Analysis of the Students' Numerical Literacy Ability of Non-state Junior High School

Interval	Freq.	Percent	Mean	Median	Mode	SD	Max	Min	Range
01-10	2	4	47	50	50	19	88	8	80
11-20	4	8							
21-30	3	6							
31-40	6	12							
41-50	13	26							
51-60	12	24							
61-70	6	12							
71-80	2	4							
81-90	2	4							
91-100	0	0							
Amount	50	100							



Picture 2. The Students' Numerical Literacy Ability of the three Junior High School.

The Students' Numerical Literacy Ability of Junior High Schools in Terms of School Status

Table 4 and Figure 2 (the A-accredited school data) show that students' numerical literacy ability scores were concentrated at 41-60 (44%) from the ideal score of 100. Most students got 50, and the scores of other students were spread out at the extreme minimum score. There were 74% of students who got less or equal to 60, and only 26% scored above 60—none of the students scored above 88. The percentage of students who scored less or the same 50 was greater than those who scored above 50. The mean, median, and mode indicated that, in general, student scores centered around 50 or the mean score of 48.

Table 5 and Figure 2 (the B-accredited school data) show that students' numerical literacy ability scores were concentrated in the intervals of 41-60 (50%) from the ideal score of 100. Most of the students got 50. The scores of other students were spread to the extreme minimum score. There were 82% of students got 60 or equal, and only 18% got more than 60. None of the students got a score above 88. The percentage of students who scored less or equal to 50 was greater than those who scored above 50. The mean, median, and mode indicated that students' scores were generally concentrated at 50 or around the average score of 48.

Table 6 and Figure 2 (the non-state school data) show that students' numerical literacy ability scores were concentrated at 41-60 (50%) from the ideal score of 100. Most of the students got a score of

50. The scores of other students were spread out at the extreme minimum score that 80% of students got less or equal to a score of 60. Based on the data interpretation, it was concluded that the second finding in this study was no difference in the students' numerical literacy ability in terms of school status. In other words, there was no significant difference in the students' numerical literacy abilities of the A and B accredited junior high schools and non-state junior high schools.

The Students' Numerical Literacy Ability of Junior High Schools in Terms of Domain Coverage

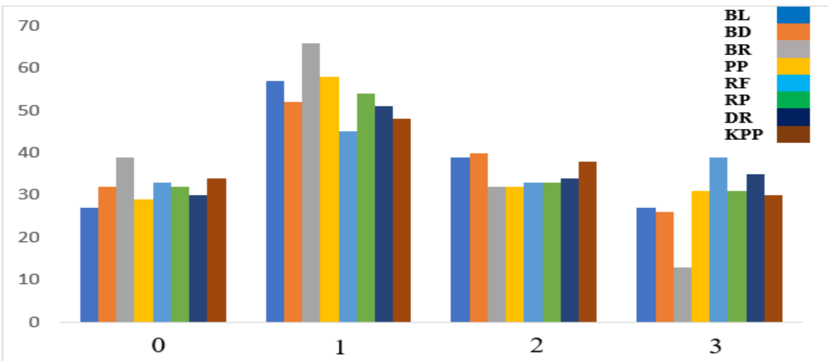
Table 7 and Figure 3 show that 27% to 44% of students scored 0 for each domain coverage. The highest percentage of students was 44% in the geometry domain coverage, and the smallest was 27% in the number domain coverage. The figure also illustrated that 32% to 41% of students got 1 for each domain coverage. The highest percentage of students was 41% in the scope of the geometry domain, and the smallest was 32% in the scope of the uncertainty and opportunity domain.

Table 7. Numerical Literacy Ability Frequency in Terms of Domain Coverage (CAD)

Material Coverage	Score							
	0		1		2		3	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Number (BL)	27	18	57	38	39	26	27	18
Two-dimensional Figure (BD)	32	21	52	35	40	27	26	17
Geometry (BR)	44	29	61	41	32	21	13	9
Equations & Inequalities (PP)	29	19	58	39	32	21	31	21
Relation and Function (RF)	28	19	57	38	36	24	29	19
Ratio and Proportion (RP)	32	21	54	36	33	22	31	21
Data and Representation (DR)	30	20	51	34	34	23	35	23
Uncertainty and Opportunity (KPP)	34	23	48	32	38	25	30	20

Table 8. Descriptive Statistical Analysis of Numerical Literacy Ability in Terms of Domain Coverage (CAD)

Domain Coverage	Mean	Median	Mode	SDV	Max	Min	Range
Number (BL)	1.44	1	1	0.9	3	0	3
Two-dimensional Figure (BD)	1.40	1	1	1	3	0	3
Geometry (BR)	1.1	1	1	0.9	3	0	3
Equations & Inequalities (PP)	1.43	1	1	1	3	0	3
Relation and Function (RF)	1.5	1	1	1	3	0	3
Ratio and Proportion (RP)	1.46	1	1	1	3	0	3
Data and Representation (DR)	1.48	1	1	1	3	0	3
Uncertainty and Opportunity (KPP)	1.49	1	1	1	3	0	3



Picture 3. The Students' Numerical Literacy Ability reviewed by Domain coverage

While there were 21% to 26% of students scored 2 for each domain coverage. The highest percentage of students was 26% in the number domain coverage, and the smallest student percentage was 21% in the equation and inequalities domain coverage. There were 9% to 23% of students who got a score of 3 for each domain coverage. The highest percentage was 23% (the data and its representation domain), and the smallest was 9% (geometry domain).

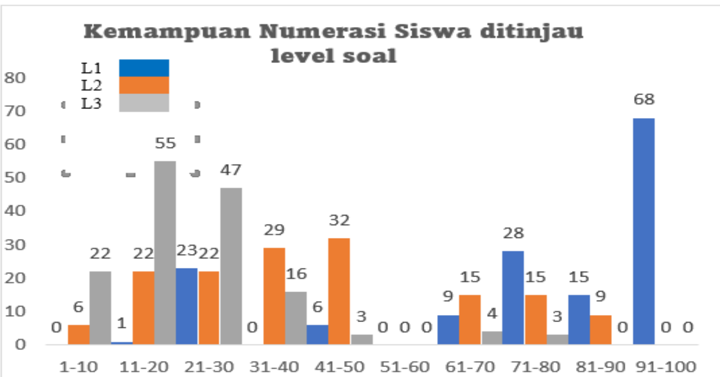
Table 8 and Figure 3 indicate that the average score for each domain coverage lies in the interval 1-1.5, from the ideal score of 3. The highest average score was the relation and function domain coverage, and the smallest was in the geometry domain, which was 1.1. The numerical literacy Score of each scope was centered on a score of 1. Based on the data interpretation, it can be concluded that the third finding in this study was the literacy ability of students' numeracy for each domain was low, and the very lowest was the geometry domain.

Table 9. Frequency of Numerical Literacy Ability in Terms of Question Level

Score interval	Question Level					
	Understanding (L1)		Application (L2)		Reasoning (L3)	
	Freq.	%	Freq.	%	Freq.	%
1-10	0	0	6	4	22	14.7
11-20	1	0.7	22	14.7	55	36.7
21-30	23	15.3	22	14.7	47	31.3
31-40	0	0	29	19.3	16	10.6
41-50	6	4	32	21.3	3	2
51-60	0	0	0	0	0	0
61-70	9	6	15	10	4	2.7
71-80	28	18.7	15	10	3	2
81-90	15	10	9	6	0	0
91-100	68	45.3	0	0	0	0
Total	150	100	150	100	150	100

Table 10. Descriptive Statistical Analysis of Numerical Literacy Ability in Terms of Question Level

Question level	Mean	Median	Mode	SDV	Max.	Min.	Range
Understanding (L1)	78	88	100	27	100	13	88
Application (L2)	42	38	50	23	88	0	88
Reasoning (L3)	21	13	12	15	75	0	75



Picture 4. Students' Numerical Literacy Ability Based on Question Level

The Students' Numerical Literacy Skills of Junior High School in Terms of Question Level

Tables 9 and 10 and Figure 4 show the question level of the students' numerical literacy skills in Junior High Schools. Only 7 students scored in the interval 51-100, and no (0%) students scored above 80. Table 10 indicated that the data concentrated on a score of 13 or around the average score of 21. In general, the students got a score of 12. The scores of other students were spread over the minimum extreme score, i.e., 77 (51%) students scored below 20. Based on data analysis, the fourth finding of this research indicated that the students' numerical literacy ability at the L1 level was the highest compared to the other levels. The students' numerical literacy abilities of the L2 and L3 level questions were low and very low, respectively.

Discussion

The first finding in this study was that the literacy skills of junior high school students were low and tended to be very low. This result was in line with the research's findings of Rakhmawati, Budiyono, and Saputro (2019), which found that the ability of students to use their mathematical knowledge in solving contextual problems was very low. In addition, the results of the PISA publication indicated that Indonesia's Mathematical Literacy Proficiency in 2015 was ranked 63 out of 70 countries with an average score of 386, while in 2018, it was ranked 73 out of 79 countries with an average score of 379 (Tohir, 2019). This ability was a weakness of junior high school students (Aini & Siswono, 2014; Hawa, 2014). Thus, completing the Numerical Literacy test requires the ability to: interpret context, interpretation, mathematization, connection, and representation.

The second finding in this study was no significant difference in the students' numerical literacy abilities based on their school status. Several people assumed that the quality of schools was determined mainly by school accreditation. There was also a growing dichotomy between state and non-state schools. This study indicated that state schools with A and B accreditation and non-state schools needed to revitalize learning, leading to the growth and development of the students' numerical literacy skills. One of the factors causing the low ability of mathematical literacy was the learning process (Hawa, 2014).

The third finding of this study was that students had difficulty completing numerical literacy related to geometry. This result was relevant to the findings of Budiarto (2009); Dirgantoro (2019); Muhassanah, Sujadi, and Riyadi (2014); and Roskawati, Ikhsan, and Juandi (2015). Factors causing students difficulty in solving geometric problems were in the context of geometry, concept formation was a complex process due to figural (perceptual) and conceptual (cognitive) aspects (Duval, 1995; Fischbein, 1993). There was the potential for cognitive conflict between the perceptual and conceptual understanding of a concept. If students looked at the attributes of a geometric figure, they might not distinguish between critical and non-critical attributes due to incompatible interactions between the concept image and the concept definition (Tall & Vinner, 1981; Vinner, 2011).

The fourth finding of this research was that students had difficulty solving Numerical Literacy problems at the reasoning level (L3). This finding was in line with Edo, Putri, & Hartono, 2013; Ministry of Education and Culture, 2013; Stacey, 2011; Wijaya, Heuvel-Panhuizen, Doorman, & Robitzsch, 2014. The reasoning was a widespread concern in designing mathematics curricula worldwide because it was very important for every individual to solve the problems at hand. One of the goals of learning mathematics was to develop students' reasoning abilities and was seen as the main effort to reform mathematics learning (Anisa, 2015; Ministry of National Education, 2006; Safrida, Asari, & Sisworo, 2016). Napitupulu, Suryadi, and Kusumah (2016) stated that there were four indicators that a student was reasoning, namely: (a) Making logical conclusions; (b) providing an explanation of the model, facts, properties, relationships, or existing patterns; (c) Making allegations and evidence; and (d) Using relationship patterns to analyze situations, make analogies, or generalize. This opinion suggested that reasoning ability was closely related to logical, analytical, and critical thinking patterns. Through good reasoning, a person would be able to draw conclusions or decisions related to his/her daily life. Someone with low reasoning ability would always have difficulty in dealing with various problems, because of the inability to connect the facts to get a conclusion. Therefore, reasoning should be developed in **everyone**. According to Tukaryanto, Hendikawati, and Nugroho (2018), students need reasoning abilities because mathematical reasoning affects students' absorption of the mathematical material being studied. Students who had good reasoning abilities understood mathematical material, and vice versa, students with low mathematical reasoning abilities found it difficult to understand. Reasoning ability can be developed by getting students used to working on non-routine problems (Hidayati & Widodo, 2015). For this reason, the teachers' role was central in developing students' reasoning abilities. Reasoning ability could be developed by getting students used to working on non-routine problems (Hidayati & Widodo, 2015).

CONCLUSSION

Based on the results of the research and discussion, it can be concluded that: (1) The student's numerical literacy skills in junior high schools were low for all domains and tended to be very low in geometry, (2) At the L1 level, students did not experience difficulties, but other levels did, especially L3; this result indicated that students' abilities were only limited to answering questions if all relevant information and questions were clearly defined or interpreted and recognized situations in contexts that required direct conclusions, (3) school status had no significant effect on the students' numerical literacy skills, for this reason, it was necessary to revitalize the mathematics learning process in schools. The limitations of this study were as follows: (1) Participants were only from the city, so it was necessary to develop participants in the regions; (2) statistical analysis used was only descriptive statistics, so it was needed to be developed with inferential analysis; and (3) the results obtained were still in the quantitative description, it needed to be examined more deeply with qualitative research.

This research was to analyze the numerical literacy ability of junior high school students. Recommendations for education practitioners are important to consider the results of this study as a basis for reforming learning in school. The following research recommendation is to analyze elementary students' numeracy literacy skills and students' errors in solving problems.

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